

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A full-jacket helical conveyor centrifuge, comprising:

a rotatably disposed metallic drum having a horizontal axis rotation and a centrifugal space therein;

a helical conveyor rotatably disposed at a different rotational speed with respect to a rotational speed of the drum, the helical conveyor being rotatable via a gearing by a first drive device or the helical conveyor being rotatable by a second drive device for the drum;

the second drive device for the drum includes at least one electromechanical direct drive;

the at least one electromechanical direct drive includes either primary or secondary elements arranged either directly at or on the drum or arranged at or on a part non-rotatably connected with the drum, and also includes corresponding secondary or corresponding primary elements arranged at a distance with respect to and without contact with the primary and secondary elements, respectively, as well as being arranged outside the drum or the part non-rotatably connected with the drum; and

a propulsion force is generated in a gearless manner by an electromagnetic field of travelling waves advancing around the drum or around the part non-rotatably connected with the drum; and

the primary or secondary elements being arranged directly on an outer periphery of the drum and at least partially surrounding the centrifugal space.

2. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein a ratio between an inner axial dimension of the drum and its inside diameter is greater than 1.

3. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the secondary elements of the at least one electromechanical direct drive are arranged on an outer periphery of the drum or on an outer periphery of the part non-rotatably connected with the drum, and the primary elements are arranged radially outside the secondary elements at a distance from the secondary elements and without contact.

4. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein one or more of the primary and secondary elements surround the drum completely or in sections concentrically and are used for generating the field of travelling waves.

5. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the primary or the secondary elements are arranged on a ring disk projecting radially from the drum or on a part non-rotatably connected with the drum, which ring disk is non-rotatably connected with the drum or the part.

6. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the second drive device for the drum includes at least one electronic direct drive .

7. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 6, wherein the least one electronic drive is arranged on an attachment of the drum as an axial extension of the drum.

8. (Cancelled)

9. (Currently Amended) The full-jacket helical conveyor centrifuge according to Claim 8, A full-jacket helical conveyor centrifuge, comprising:

a rotatably disposed metallic drum having a horizontal axis rotation;

a helical conveyor rotatably disposed at a different rotational speed with respect to a rotational speed of the drum, the helical conveyor being rotatable via a gearing by a first drive device or the helical conveyor being rotatable by a second drive device for the drum;

the second drive device for the drum includes at least one electromechanical direct drive;

the at least one electromechanical direct drive includes either primary or secondary elements arranged either directly at or on the drum or arranged at or on a part non-rotatably connected with the drum, and also includes corresponding secondary or corresponding primary elements arranged at a distance with respect to and without contact with the primary and secondary elements, respectively, as well as being arranged outside the drum or the part non-rotatably connected with the drum;

a propulsion force is generated in a gearless manner by an electromagnetic field of travelling waves advancing around the drum or around the part non-rotatably connected with the drum;

wherein at least one cylindrical attachment is arranged in an axial direction between main bearings; and

wherein the at least one cylindrical attachment is arranged on an outer periphery of a conical section of the drum.

10. (Currently Amended) The full-jacket-helical-conveyor-centrifuge according to Claim 8, A full-jacket helical conveyor centrifuge, comprising:

a rotatably disposed metallic drum having a horizontal axis rotation;

a helical conveyor rotatably disposed at a different rotational speed with respect to a rotational speed of the drum, the helical conveyor being rotatable via a gearing by a first drive device or the helical conveyor being rotatable by a second drive device for the drum;

the second drive device for the drum includes at least one electromechanical direct drive;

the at least one electromechanical direct drive includes either primary or secondary elements arranged either directly at or on the drum or arranged at or on a part non-rotatably connected with the drum, and also includes corresponding secondary or corresponding primary elements arranged at a distance with respect to and without contact with the primary and secondary elements, respectively, as well as being arranged outside the drum or the part non-rotatably connected with the drum;

a propulsion force is generated in a gearless manner by an electromagnetic field of travelling waves advancing around the drum or around the part non-rotatably connected with the drum;

wherein at least one cylindrical attachment is arranged in an axial direction between main bearings; and

wherein the at least one cylindrical attachment is a chamber for receiving a centripetal pump.

11. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the primary elements surround the drum in sections and the secondary elements surround the drum completely.

12. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the primary elements include a plurality of successively controllable coils distributed on an outer periphery of the drum for generating the field of travelling waves which travel around the drum and take along a plurality of the secondary elements.

13. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the drum includes at least one play-free bearing around which or directly adjacent to which at least one electromagnetic direct drive is arranged.

14. (Currently Amended) ~~The full-jacket-helical-conveyor-centrifuge according to Claim 1;~~ A full-jacket helical conveyor centrifuge, comprising:

a rotatably disposed metallic drum having a horizontal axis rotation;

a helical conveyor rotatably disposed at a different rotational speed with respect to a rotational speed of the drum, the helical conveyor being rotatable via a gearing by a first drive device or the helical conveyor being rotatable by a second drive device for the drum;

the second drive device for the drum includes at least one electromechanical direct drive;

the at least one electromechanical direct drive includes either primary or secondary elements arranged either directly at or on the drum or arranged at or on a part non-rotatably connected with the drum, and also includes corresponding secondary or corresponding primary elements arranged at a distance with respect to and without contact with the primary and secondary elements, respectively, as well as being arranged outside the drum or the part non-rotatably connected with the drum;

a propulsion force is generated in a gearless manner by an electromagnetic field of travelling waves advancing around the drum or around the part non-rotatably connected with the drum; and

a motor generating an additional co-rotating field of travelling waves generates the different rotational speeds between the helical conveyor and the drum.

15. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein the first drive device for the helical conveyor is constructed independently of the second drive device for the drum.

16. (Cancelled)

17. (Currently Amended) The full-jacket helical conveyor centrifuge according to Claim 16~~1~~, wherein the first drive device for the drum and the second drive device for the helical conveyor are is designed as an electromagnetic direct drivesdrive.

18. (Currently Amended) The full-jacket helical conveyor centrifuge according to Claim 17~~1~~, wherein a the gearing is not arranged between the drum and the helical conveyor.

19. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 1, wherein a rotational speed of one or more of the drum and the helical conveyor can be adjusted continuously.

20. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 2, wherein the ratio is greater than 2.5.

21. (Previously Presented) The full-jacket helical conveyor centrifuge according to Claim 12, wherein the secondary elements are permanently magnetic.

**IN THE DRAWINGS:**

Please enter the attached sheet of drawing as a Replacement Sheet that include the following changes:

Figure 1 – Add Legends: Motor Coil/Magnet, EM Drive and Motor.